Tensioning System for a Mobile Telescopic Crane

Patent claims

1. A tensioning system for a mobile telescopic crane, in which the telescopic mast (7) is outwardly braced via a tensioning means (1, 11), characterised in that said tensioning means (1, 11) is guided along or over the telescopic mast (7) and fastened in such a way that a pressure bias of the mast (7) is created in the area of the tensioning means guide.

2. The tensioning system as set forth in claim 1, characterised in that the tensioning means (1, 11) is guided on both sides of the mast portion (7a, 7b) to be braced and biased.

3. The tensioning system as set forth in claim 1 or 2, characterised in that the tensioning means (1, 11) is guided from an outer bearing point to a joining point in the upper mast area and then to an inner or outer bearing point in the lower portion of the mast.

4. The tensioning system as set forth in claim 3, characterised in that the tensioning means (1, 11) is turned and deflected at the joining point in the upper mast area by means of a roller (4, 14).

5. The tensioning system as set forth in any one of claims 1 to 4, characterised in that, when the upper run (7a) of the mast (7) is braced and biased, the tensioning means (1) is guided to the upper portion of the mast (7) by a tensile unit or winch (3) provided on the crane superstructure, via at least one pylon (9) and/or at least one bracing support (10).

6. The tensioning system as set forth in claim 5, characterised in that the pylon or pylons (9) can be fastened, swivelling, in the area of the crane superstructure and in particular are arranged protruding obliquely from the level luffing plane.

7. The tensioning system as set forth in any one of claims 1 to 6, characterised in that, when the lower run (7b) of the mast (7) is braced and biased, the tensioning means (1) is guided to the upper portion of the mast (7) by a tensile unit or winch (17) provided on the crane superstructure.

8. The tensioning system as set forth in any one of claims 1 to 7, characterised in that two tensioning means (1) are provided for the upper run (7a) of the mast (7), one on each side.

9. The tensioning system as set forth in any one of claims 1 to 8, characterised in that two tensioning means (1) are provided for the lower run (7b) of the mast (7), one on each side.

10. The tensioning system as set forth in any one of claims 3 to 9, characterised in that the inner or outer bearing point (6) is arranged on the lowermost extending telescopic portion (5) in the lower portion of the mast (7) or on the base portion of the mast in the foot area.

11. The tensioning system as set forth in any one of claims 1 to 10, characterised in that, if an auxiliary crane tip (18, 26) is provided, the tensioning means (1) is also guided, at least in sections, along or over said tip (18, 26).

12. A tensioning system for a mobile telescopic crane, comprising tensioning means tensile units or winches (3, 17) and tensioning means (1, 11) for bracing the telescopic mast (7), in particular comprising a tensioning means guide as set forth in any one of claims 1 to 11, characterised in that said tensile units or winches (3, 17) are arranged on the crane superstructure at a distance from the level luffing plane of the telescopic mast (7) of the crane, such that the tensioning means (1, 11) can absorb a substantial proportion of the loads having components perpendicular to the level luffing plane.

13. The tensioning system as set forth in claim 12, characterised in that the tensioning means tensile units or winches for bracing the upper run (7a) of the mast are arranged behind the mast joint of the crane superstructure.

14. A tensioning system for a mobile telescopic crane, comprising tensioning means winches (3, 17) and tensioning means (1, 11) for bracing the telescopic mast (7), in particular comprising a tensioning means guide as set forth in any one of claims 1 to 11 and/or a tensile unit or winch arrangement as set forth in claim 12 or 13, characterised in that said tensioning means tensile units or winches (3, 17) are arranged on the crane superstructure, such that they can shift.

15. The tensioning system as set forth in claim 14, characterised in that the tensioning means tensile units or winches (3, 17) are assigned to counterweights (2) of the crane and can be connected to individual or all assigned counterweights (2).

16. The tensioning system as set forth in claim 14 or 15, characterised in that the tensioning means tensile units or winches (3, 17) are attached to the crane superstructure via damping units (15).